

REMARKS

The application is believed to be in condition for allowance.

Responsive to the requirement for election of species, applicants previously elected Species 1, corresponding to Figure 2.

The present Official Action is non-final.

The claims have been amended to further recite a radial through-groove (8i) connecting the cavity seating the ball to hole, the radial through-groove being outside the narrow section (7,7') containing the straight portion. Claim 3 is cancelled.

No new matter is entered by these amendments.

This feature reads on all embodiments/species of the invention.

Favorable reconsideration is respectfully requested in view of the foregoing amendment and the following remarks.

For the reasons discussed below, it is believed that all of the claims are in condition for allowance.

Compare the state of the art pen shown in Figure 1 to the embodiment of the invention illustrated by Figure 2.

FIG.1

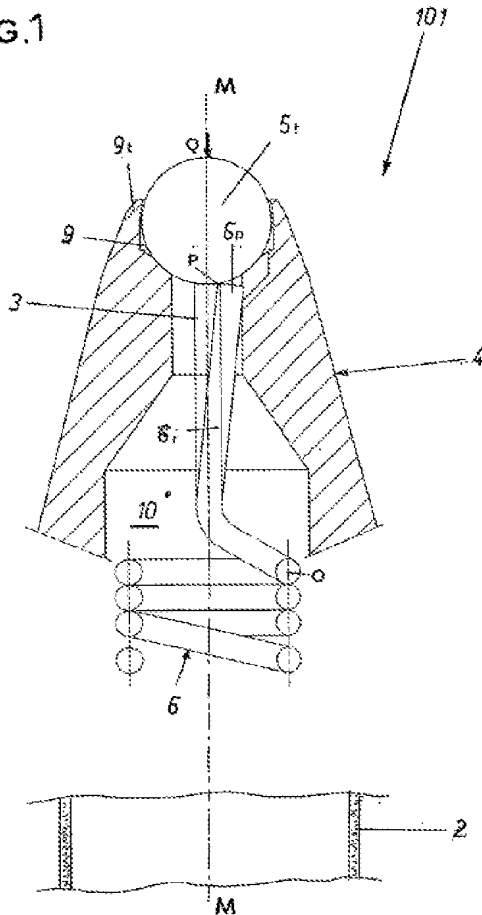
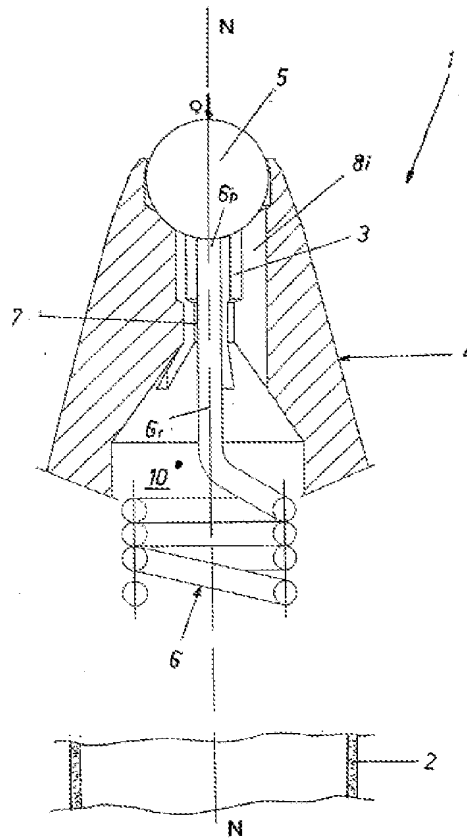


FIG.2



A state of the art ball-point pen 101 comprises an ink reservoir communicating with a cylindrical hole 10 connected to a capillary channel 3 of a tip 4 which is provided with a cavity 9 which seats the ball 5 for writing.

In the Figure 2 embodiment (elected in the March 9, 2008 response), provides in the capillary channel 3 a cylindrical

narrow section 7 through which is passed through the straight portion 6r of the spring 6.

Since, in the situation illustrated above, there could be an obstruction in the flow of the ink through the narrow section 7, which is partially occluded by the straight portion 6r of the spring 6, the inventive pen also provides one or more radial through-grooves 8i which connect the cavity 9 seating the ball 5 to the with which the ink reservoir 2 communicates.

FIG. 2

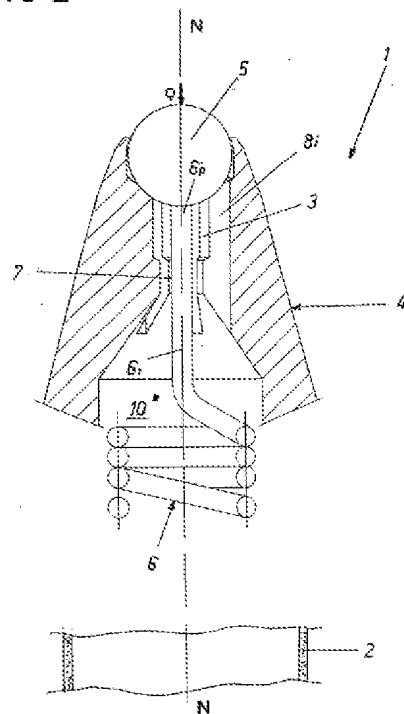
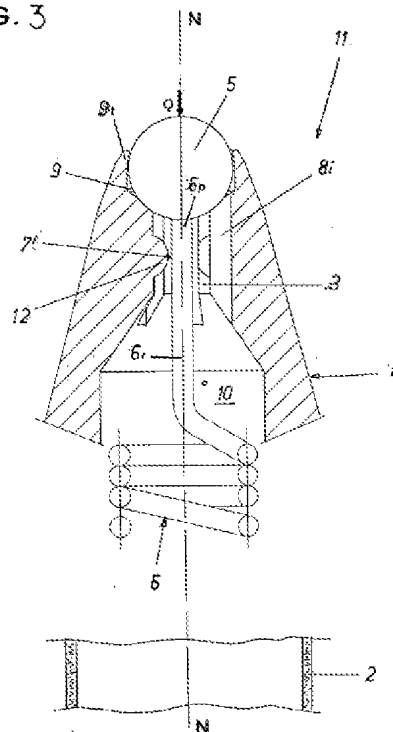


FIG. 3



The embodiment of Figure 3, further provides a ring 12 which has a semi-circular cross section projecting inwards and has an axis coinciding with the longitudinal axis N-N of the ball-point pen 11.

In both the cases, the narrow sections 7, 7', irrespective of their form, keep substantially fixed, i.e., oriented along the longitudinal axis N-N of the ball-point pen 1, 11, the straight portion 6r of the spring 6, the free end 6p of which therefore always presses axially on the ball 5 in a substantially central position, avoiding the disclosed drawbacks of the prior art, while the inventive pen also provides one or more radial through-grooves 8i which connect the cavity 9 seating the ball 5 to the with which the ink reservoir 2 communicates to provide for an ink path.

Claim Rejections - 35 USC § 102

Claims 1 and 3 were rejected under 35 U.S.C. 102(b) as being anticipated by Okamoto 5,277,510.

Claims 1, 3, 4, 6 and 8 were rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima (US 6,220,774).

Both of the applied references disclose a ball-point pen comprising an ink reservoir which communicates with a usually cylindrical hole connected to the capillary channel of a tip which has a cavity inside which the ball for writing is seated. The capillary channel has constant section.

This arrangement as disclosed in the published application (column 1 paragraphs [0005-0006]) causes the appearance, along the writing lines, of blotches which are

randomly arranged, creating an unaesthetic effect which is automatically associated with a poor quality of the pen.

Moreover, in the region of the abovementioned blotches, the ink, forming zones which have a greater than normal thickness, is unable to dry rapidly and, if inadvertently one brushes against said blotches with one's hand or arm, the result is to cause them to spread, producing unaesthetic smears and also dirtying one's hand or arm.

In these prior-art ball-point pens is not possible to reduce the section of the capillary channel without affecting the regular ink flows out. Further, a capillary channel of constant and great section does not avoid that the straight portion of the spring, when it is pressed axially during writing, slides on the surface of the ball, flexing with respect to the remaining part of the spring, and, being deviated from the initial position coinciding with the longitudinal axis of the ball-point pen, resulting in the unaesthetic effect above described.

Neither reference teaches or suggests the solution of the present invention wherein a narrow section (7,7') within the capillary channel prevents the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen (1), together with a radial through-groove (8i) connecting the cavity seating the ball to hole, the radial through-groove being outside the narrow section (7,7') containing the straight portion.

Okamoto

In Okamoto, the embodiment of Figure 3 includes a spring 6 terminating in a straight portion 6a. the rejection offers elements 24 as through-grooves.

These grooves are present in the embodiment of Figure 2 (which does not have a spring 6 terminating in a straight portion 6a) but not part of the embodiment of Figure 3.

Therefore, Okamoto does not anticipate.

Fukushima

Figure 2 shows a spring with a final straight section 4a bearing against the ball 3.

Figure 3 shows a forward end part of the ballpoint tip 1 shown in Figure 2 in an enlarged, fragmentary longitudinal sectional view.

Figures 4 and 5 show that the ink passage 2g has a plurality of radial grooves 2gg to enable the ink to flow smoothly through the ink passage 2g.

FIG.3

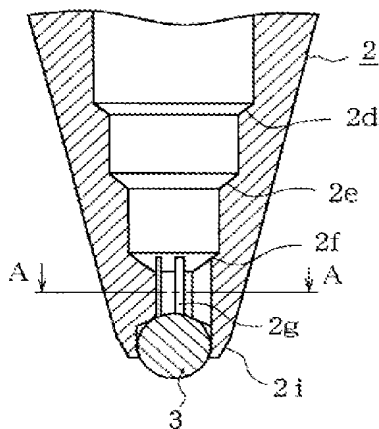


FIG.4

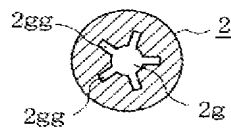
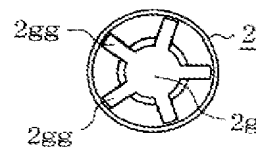


FIG.5

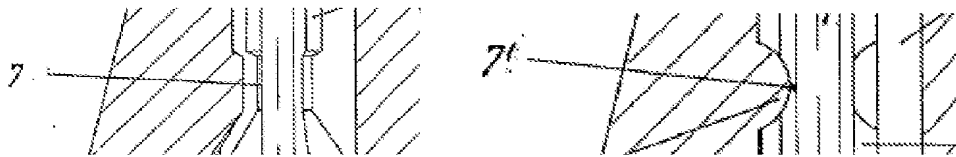


With this design, Fukushima teaches to provide a capillary channel having right section constant along its longitudinal axis. Therefore the gap between the straight portion of the spring and the "wall" of the capillary channel is constant along its longitudinal axis.

In contrast to the present invention, Fukushima does not teach to provide a capillary channel having a locally

radially decreased cross-section along its longitudinal axis to define a narrow section (7, 7') within the capillary channel which narrow section prevents the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen (1).

See the below excerpt from Figures 2-3 of the present application.



Nor could the Fukushima pen be modified to include a local narrow section, as in the ball-point pen according to Fukushima is not possible to further reduce the section of the capillary channel without affecting the regular ink flows out.

Applicant points out that the Fukushima capillary channel of constant and large cross-section does not prevent the straight portion of the spring, when it is pressed axially during writing and slides on the surface of the ball, from flexing with respect to the remaining part of the spring, and thereby deviating from the initial position coinciding with the longitudinal axis of the ball-point pen, resulting in the unaesthetic effect. This is because there is no narrow section which prevents the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the pen.

Accordingly, Fukushima does not anticipate.



Reconsideration and allowance of the claims are respectfully requested.

Should there be any matters that need to be resolved in the present application; the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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